



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-ABUJA**  
**FACULTY OF COMPUTING**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**2025\_2 EXAMINATIONS**

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**Course Code:** CIT401

**Course Title:** Organization of Programming Languages

**Time:** 3 Hours

**Credit:** 3 Units

**Instruction:** Attempt 4 questions in all. Question 1 is Compulsory and any other three (3)

- 1a. Explain what a programming language is and its purpose. **(5marks)**
- 1b. Discuss the significance of BASIC in the evolution of programming languages and its influence on modern computing. **(5marks)**
- 1c. Describe the main elementary structures used in structured programming and provide an example of how each is used. **(15marks)**
  
- 2a. Differentiate between syntax, grammar, and semantics in the context of a programming language. **(6marks)**
- 2b. Describe the three classifications of programming languages and provide examples where applicable. **(9marks)**
  
- 3a. How do the features of a programming language influence program performance? **(7marks)**
- 3b. What is a syntax graph, and how does it complement BNF notation in defining programming languages? **(8 marks)**
  
- 4a. Explain the characteristics and applications of Assembly Language as it was in 1949. Why is it still relevant today? **(5marks)**
- 4b. Explain the concept of structured programming and its significance in modern programming languages. **(10 Marks)**
  
- 5a. Describe the types of errors that can occur at the syntactic level of a program. Provide an example to illustrate your explanation. **(5 marks)**
- 5b. Explain the four structural layers of programming languages. **(10marks)**
  
- 6a. What is the difference between contextual errors and semantic errors? Provide an example to clarify your answer. **(5marks)**
- 6b. Explain how EBNF handles operator associativity differently than BNF. **(5marks)**
- 6c. Describe the difference between lexical rules and syntactic rules in the context of programming languages. Provide an example to illustrate your answer. **(5marks)**